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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,747	01/15/2004	Johan D. Overby	9131.0020-00	6889

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EXAMINER	
WHITTINGTON, KENNETH	
ART UNIT	**PAPER NUMBER**
2862	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/759,747	OVERBY ET AL.	
	Examiner	Art Unit	
	Kenneth J. Whittington	2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18 and 21-35* is/are pending in the application.

4a) Of the above claim(s) *1-17 and 25-27* is/are withdrawn from consideration.

5)☒ Claim(s) *18 and 21-24* is/are allowed.

6)☒ Claim(s) *28,29,33 and 35* is/are rejected.

7)☒ Claim(s) *30-32 and 34* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *1/15/04* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The Request for Continued Examination filed November 29, 2006 has been accepted and the Amendment filed October 30, 2006 has been entered. In view thereof, the rejections of the claims 28, 29, 33, 34 and 35 over Rodgers et al. (US6362737) in view of McEwan (US5512834) and Royle et al. (US6617856) has been withdrawn.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 28, 29 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright et al. (US 6,977,504), hereinafter Wright, in view of Royle et al. (US 6,617856), hereinafter Royle. Regarding claims 28, 29 and 35, Wright teaches a method for locating one or more markers comprising:

generating a series of electromagnetic pulses, wherein the pulses can excite multiple types of markers each representing a different type of marker having a distinct frequency (See Wright col. 8, line 61 to col. 9, line 16, col. 10, line 49 to col. 11, line 15, col. 12, lines 34-57 and col. 25, lines 9-17);

receiving signals as a function of time between application of the pulses (See col. 9, lines 4-27);

averaging the signals over a predetermined number of pulses to obtain an average decay signal (See col. 9, lines 35-47);

initially determining a frequency, field strength, and phase for responses from the one or more markers (See col. 11, lines 16-26);

accurately determining the frequency, field strength, and phase by successive elimination of a contribution from each of the one or more markers and refining the electromagnetic pulses in order to provide resonant frequencies for each of the one or more markers, wherein accurate determining and the refining assists in distinguishing a particular marker from the other markers (See col. 11, lines 27-52 and also col. 11, line 53 to col. 12, line 57);

wherein generating a series of electromagnetic pulses includes: generating a transmit signal with resonant frequencies from at least one marker and applying the transmit signal to an electromagnetic generator (See col. 11, lines 44-52).

However, Wright does not explicitly teach marker localization method to determine multiple utility locations using a plurality of markers representing different utility lines. Royle teaches using conventional marker locators associated with multiple markers representing different types of utilities based on frequency to determine the location and type

utilities (See Royle col. 1, lines 43-65). It would have been obvious at the time the invention was made to use the marker locator of Wright to located markers associated with utilities. One having ordinary skill in the art would have been motivated to do so to use a marker locator system to find the position and/or location of various utilities (See Royle col. 1, lines 43-65) in areas containing many utilities with associated markers.

Claims 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wright in view of Royle as noted above, and further in view of Whitesmith et al. (US6577238), hereinafter Whitesmith. Regarding the claim, the noted combination teaches obtaining initial determinations of frequency, field strength and phase of the marker from parameters (See Wright col. 11, lines 16-26). However, the noted combination does not explicitly teach using a fast Fourier transform to do so. Whitesmith teaches using a fast Fourier transform in an RFID detection system (See Whitesmith col. 3, line 59 to col. 4, line 10). It would have been obvious at the time the invention was made to use the FFT in the method and apparatus of the noted combination such that the initial determinations are obtained using the FFT. One having ordinary skill in the art would have

been motivated to do so because using a FFT provides frequency peaks for each of the tags or markers which enables response signals from each tag or marker to be determined (See Whitesmith col. 3, line 59 to col. 4, line 10).

Allowable Subject Matter

Claims 18 and 22-24 are allowed.

The following is an examiner's statement of reasons for allowance: the prior art does not show a delay phase adjustment as recited in the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claims 30-32 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: regarding claims 30-32, the prior art does not show a delay phase adjustment to provide a delay phase of substantially zero at the end of the electromagnetic

pulse, as recited in the claims, and in combination with the other features of the claims.

Regarding claim 34, the prior art does not show or teach determining the parameters of the at least one marker with the response from the dominant marker removed, in combination with the other features of the claim.

Response to Arguments

Applicant's arguments filed in the Amendment with regard to claims 28, 29 and 35 as being obvious over Wright in view Royle have been fully considered but they are not persuasive.

Regarding these rejections, the only argument asserted by Applicants is that the references do not disclose multiple markers each representing differing utilities and the mark distinguishing the particular type of marker from the different types.

As noted above in the rejections, Wright specifically discloses having different types of markers, each having a different frequency and distinguishing the markers by windowing based on the frequencies. Royle teaches that conventional systems use multiple marker types having different frequencies, each different marker representing a different utility. Thus,

the references teach these specific features and the combination of Wright and Royle teach the features of the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth J. Whittington whose telephone number is (571) 272-2264. The examiner can normally be reached on Monday-Friday, 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Kenneth J Whittington
Examiner
Art Unit 2862

kjw

EDWARD LEFKOWITZ
SUPERVISORY PATENT EXAMINER
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